Alternative: Purchase Surface Water Rights in the Marketplace

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1. Summary of the Alternative

Purchasing or entering into long-term leases for native Rio Grande water rights is an option that could help some water suppliers in the Jemez y Sangre region meet growing demand by transferring water from one sector to another. Water rights purchases generally involve at least a permanent transfer from one owner to another and in many cases involve a change in location and/or purpose of use. Other transfers can be more temporary and may take the form of a lease.

The feasibility of purchasing water rights to meet future demand is influenced by the locations of the move to and move from diversions and places of use, the number of willing sellers, and administrative limitations created by the New Mexico Office of the State Engineer (OSE). In particular, the market for surface water rights purchases is limited by the OSE restriction on moving the point of diversion for water rights from above the Rio Grande Compact's measuring gage at Otowi (located in the central part of the Jemez y Sangre region) to points of diversion below the Otowi gage and vice versa (part of the region is above the Otowi gage). One ramification of this restriction is that water rights below the Otowi gage may have a significantly higher price because the demand for those rights will be very high due to future growth in this part of the region. In the portion of the region above the Otowi gage, prices may not be quite as elevated if the restrictions continue.

One way to minimize this limitation may be to purchase water rights with above-Otowi gage diversion points (i.e., not change the point of diversion), but move the place of use to a point below the gage. The New Mexico legislature passed a memorial in 2001 stating that the place of use could not move below the latitude of the diversion point. Although the memorial has no legal weight, the OSE could consider the memorial to be a statement of public welfare, which

could serve as a basis for denying a transfer application. Additional discussion of transfers across Otowi gage is provided in a separate paper (DBS&A, 2002).

2. Technical Feasibility

Because the availability of water rights for sale or lease is extremely limited at the present time, this alternative may not be viable in the short term (it can take up to one year to locate water rights for willing buyers). At some point, demand may drive the price of water rights sufficiently high that owners will sell their water. A standing offer program coordinated among municipalities might be an effective mechanism for attracting sellers. Such a program could be coordinated with a regional water bank.

If surface water or groundwater rights are purchased, an application must be filed with the OSE to transfer the point of diversion and/or place of use and/or purpose of use. Other water users will have the opportunity to protest that application. Technical analyses regarding the hydrologic effects of transferring the point of diversion or place of use may be required.

In most cases the transfer will be to an existing well or surface diversion. There should be no significant technical obstacles to the installation of routine surface water diversions or new wells, as the design and construction techniques for these facilities are well developed. Conversely, as discussed in Sections 6 and 7, environmental or socioeconomic obstacles may arise if a new surface or groundwater diversion needs to be installed.

This alternative has the potential to increase the supply available to meet growing demand by either transferring water rights from an existing agricultural use within the region or from areas to the north or south of the Jemez y Sangre water planning region, yet within the State of New Mexico.

3. Financial Feasibility

Purchasing water rights is generally a far less costly strategy for increasing water supplies than new supply development, which commonly requires construction of reservoirs and conveyance structures in addition to the expensive environmental documentation necessary to comply with the National Environmental Policy Act and the Endangered Species Act. However, the existing infrastructure, particularly in the Santa Fe subregion, is insufficient to deliver water rights presently held. Therefore, new infrastructure will likely be required to accommodate any large purchase of water rights.

While water rights prices vary according to many factors, such as priority date and location relative to the Otowi gage, some water rights in the Pojoaque Valley have sold for as much as $20,000 per acre-foot of consumptive use. This price would not include additional transaction and procedural costs—such as retaining legal and technical expertise, complying with OSE requirements, responding to protests—and, should the transfer require additional diversion structures, engineering costs. Combined legal and technical studies to obtain OSE approval could possibly be completed for $100,000 to $200,000; however, if extensive modeling is required and/or contested legal issues are present, implementing this alternative could cost up to $1 million or more.-

Sources of public financing for water rights purchases are available to the region. The New Mexico Legislature created the Water Trust fund with the goal of financing water projects to help meet New Mexico's water requirements. Although long-term financing for the fund is uncertain, it could potentially be a long-term source of financing for these types of transactions. Additionally, state or federal line-item appropriations offer another vehicle for financing at least part of the water rights purchase.

The new local option Capital Outlay gross receipts tax (GRT) for which both the City and the County of Santa Fe are eligible (and the County has passed), provides a mechanism to fund the purchase of water rights. This GRT has the potential to provide up to $80 million in bonding authority. Counties and municipalities that are not eligible for this tax have other GRT authority

they can use. General Obligation bonds also provide substantial bonding capacity in the region if the political will or public support exists. Other mechanisms that can be used by water purveyors to fund the purchase of water rights include impact fees and user fees.

4. Legal Feasibility

The process for transferring surface water rights is an administrative process governed by NMSA 1978, §§72-5-22 through 24 and will only be approved by the State Engineer upon application, after notice and publication, and if such transfer will not impair existing water rights, be contrary to the conservation of water, or be detrimental to the public interest. One noteworthy restraint on transfer is the State Engineer's policy of not allowing transfers across the Rio Grande Compact's measuring gage at Otowi Bridge, as discussed in Section 1. In addition, not all water rights in the region have been adjudicated, which means that priority dates and amounts of certain water rights are not clear.

5. Effectiveness in Either Increasing the Available Supply or Reducing the Projected Demand

This alternative would increase water rights for individual purchasers. By having additional water rights, water providers will be better able to meet demand. If available, water rights could be purchased from areas outside of the Jemez y Sangre water planning region to serve sub-basins below the Otowi Gage. For sub-basins above the Otowi gage, water rights, if they are available, could be transferred within the Jemez y Sangre region or outside of it, up to the Colorado state line.

The amount of water that could be obtained from this alternative is dependent on the amount of water consumed by the crop (not diverted) and the amount of acres presently irrigated. The amount of water consumed by each acre of irrigated land varies depending upon the consumptive irrigation requirement (CIR) and the incidental depletions (ID). For most of the irrigated acreage in the Jemez y Sangre water planning region, approximately 3 acre-feet are diverted for every acre irrigated. However, only about 1 to 2 acre-feet per acre are

consumptively used (CIR+ID), with an average for the region of 1.3 acre-feet per acre. Because the irrigated acreage may not have received a full supply historically, the water right that may be transferred is likely to be reduced by 40 to 50 percent. A total of 19,627 acres are irrigated in the Jemez y Sangre region (Duke, 2001) with a consumptive use of approximately 25,000 acre-feet. If the historical availability is only 50 percent, then the amount of water to be gained by this alternative would be about 12,700 acre-feet per year.

6. Environmental Implications

The purchase and transfer of water rights may change river flows locally, depending on the locations of diversions and return flows (these impacts are greatest for water rights transferred from downstream to upstream on the Rio Grande), and changes in flows could affect the riparian ecosystem. Although users in the system have the opportunity to protest if the flows are so altered that their water rights are affected, the protest mechanism has not traditionally been geared toward preventing damage to aquatic species and riparian habitat. In fact, the OSE has allowed certain river reaches in New Mexico to be entirely depleted to fulfill water rights. Thus changes in points of diversion so that water is diverted in places it previously had not been diverted could negatively impact the riparian habitat and aquatic species in that reach.

In addition, transfers from agricultural to urban uses can reduce the amount of greenspace and wildlife habitat that occur around flood-irrigated fields.

7. Socioeconomic Impacts

Surface water right purchases can be structured in differing ways to minimize potential economic impacts linked to changes in water use. For instance, water needed for future urban growth can be purchased by a municipal provider and then leased back for continued use in irrigation until needed for new uses. This practice, however, can lead to an erosion of the rural community before the impacts are actually felt, which if perceived, might prompt local actions to retain water within the area of origin. Water purchases can also be structured as dry year

options in which the water is used in irrigation except during dry years when urban supplies are short.

The Jemez y Sangre region has subregions that are defined by traditional agricultural communities. These areas could be negatively impacted if large amounts of water are transferred away from agricultural uses.

Permanent transfers from agricultural use can decrease revenues from crop sales and may affect jobs (and cultural values) linked to irrigated lands. Although urban uses of water generate higher levels of local economic output and employment than agricultural uses, rural households may be located too far for convenient commuting to off-farm jobs. Nevertheless, irrigated agriculture in the region is primarily small-scale and generally provides only part-time and seasonal employment. Most households with irrigated land earn the majority of their household income from off-farm jobs, and these households may experience better off-farm income opportunities as a result of water transfers to urban uses.

In the Jemez y Sangre region, community and cultural effects of surface water transfers may be of more concern than direct effects on rural jobs and household income. Those water providers seeking to acquire surface water rights could consider establishing guidelines for circumstances under which they would pay third-party compensation. Such voluntary compensation practices may reduce conflicts and thus reduce the costs of implementing water transfers. For instance, a water provider could compensate for losses in local property tax or sales tax payments if a water transfer causes a reduction in property values or in local economic output. Municipal water providers also could adopt a policy of covering fees and any increased costs created by the transfer for acequias and community ditch associations.

Given high regional prices for surface water rights, and depending on the financial mechanisms used to pay for purchases, increases in municipal water rates may be necessary. Municipal water supply authorities could incorporate higher water rates into a pricing structure that would include conservation incentives.

Socioeconomic obstacles will likely arise from the transfer of water rights, particularly if the transfer is to a point of diversion outside of the area of origin or to a point across the Otowi gage. Acequia interests have long been opposed to the transfer of water rights, even temporarily, outside their local watershed if the transfer would likely result in negative impacts to community ditch systems and important associated socioeconomic and cultural values. Acequias are vital both as a sustainable irrigation system for subsistence and market agriculture and also as part of the social glue that holds together rural communities. Planners should consider the fact that acequias and other local traditions are critical not only for the continuity of rural culture and communities, but also for the local tourism industry, which is built in large part upon the unique cultural and historical personality of the region.

Regional acequia associations consider transfers of temporarily unused water rights within a local watershed or area of origin as acceptable. Local exchange of water rights, equitably controlled by local water right owners, would minimize potential socioeconomic and cultural impacts, as well as the environmental impacts. However, allowing only local transfers does not address the need to move water to high-demand uses in other locations.

Acequia representatives have indicated that before they will support any further discussion of purchasing surface water rights, they would like the following protections to be in place:

- Area of origin protection against adverse effects on local communities
- Recognition of Acequia authority to veto a water transfer out of the Acequia
- Establishment of Acequia authority to create local water banks
- Development of a public welfare statement to address water transfers

8. Actions Needed to Implement/Ease of Implementation

Should the Jemez y Sangre planning region choose to purchase surface water rights on the marketplace, several actions are needed:

- Conduct a regional water rights pricing study to assist planners with predicting future costs associated water rights acquisitions for future growth.

- Determine whether the OSE would allow a change in place of use from above to below Otowi gage.

- Identify water rights available for purchase in the marketplace.

- Allocate adequate funds for the purchase of water rights.

- Identify points of diversion for any newly acquired rights.

9. Summary of Advantages and Disadvantages

The advantages of purchasing surface water rights include:

- Water rights are secured for future urban use and urban quality of life.
- Bringing in water from areas outside the region does not impair local cultural resources within the region.

Some disadvantages may be:

- Lack of water available for purchase on the market

- Impacts to traditional communities in the upper portion of the planning region due to transfers from agricultural use

- Further degradation of riparian systems if water right is transferred upstream.

- Water supply is vulnerable during periods of drought as compared to a groundwater supply.

References

Colby, Bonnie G. 1990. Transactions cost and efficiency in western water allocation. *American Journal of Agricultural Economics* 72(1990):1184-1192.

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